



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/591,293

03/23/2007

Yannick Gerard

295641US6PCT

9222

22850

7590

12/28/2010

OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, L.L.P.  
1940 DUKE STREET  
ALEXANDRIA, VA 22314

EXAMINER

EDWARDS, BRETT J

ART UNIT

PAPER NUMBER

3781

NOTIFICATION DATE

DELIVERY MODE

12/28/2010

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentdocket@oblon.com  
oblonpat@oblon.com  
jgardner@oblon.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/591,293	<b>Applicant(s)</b> GERARD ET AL.	
	<b>Examiner</b> Brett Edwards	<b>Art Unit</b> 3781	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 03 November 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 11, 16-18 and 20-32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 11, 16-18, 20-32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

**DETAILED ACTION**

***Response to Amendment***

The amendments filed 11/3/2010 have been accepted. Claims 11, 16-18 and 20-32 are currently pending in the application.

***Claim Rejections - 35 USC § 103***

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claims 11, 16-18, 21, 22, 24-26 and 28-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Muirhead (US 6661339) in view of Brandner (US 20050115973), both of record.

As to Claim 11, Muirhead discloses a system for fastening, by welding, a component to a motor vehicle fuel tank, the system comprising: a component (104, 121, 122) including a portion with a conical surface profile, the component including a tubular shape; a tank with an opening (120), a perimeter of which opening includes a conical surface profile; and a welded area (112) between at least one portion of the conical surface of the perimeter of the opening in the tank and at least one portion of the conical surface of the component, wherein the perimeter of the opening of the tank is a deformed portion of a wall of the tank, wherein the component and the tank are molded in one or more molds (102) including impressions corresponding to the conical surfaces, wherein the tank includes a multilayer structure and, along the entire surface where the

Art Unit: 3781

component is fastened to the tank, a number of superposed layers is equal to a sum of a number of layers in the component and a number of layers in the tank, and wherein the multilayer structure includes at least two layers (210) of high-density polyethylene (HDPE) between which a layer (202) comprising an ethylene/vinyl alcohol copolymer (EVOH) is inserted (Fig. 10-13; Col. 7, ll. 12-56; Col. 10, line 41 - Col. 11, line 14).

The presence of process limitations on product claims, wherein the product does not otherwise patentably distinguish over the prior art, cannot impart patentability to the product. In re Stephens 145 USPQ 656 (CCPA 1965). Therefore, the limitation of the tank and component being molded in one or more molds including impressions corresponding to the conical surfaces has not been given patentable weight.

Muirhead does not expressly disclose the component includes a multilayer structure, wherein the multilayer structure includes at least two layers of high-density polyethylene (HDPE) between which a layer comprising an ethylene/vinyl alcohol copolymer (EVOH) is inserted.

However, Brandner discloses a fuel tank and a component, wherein the component (34) includes a multilayer structure, wherein the multilayer structure includes at least two layers (48, 50) of high-density polyethylene (HDPE) between which a layer (52) comprising an ethylene/vinyl alcohol copolymer (EVOH) is inserted (Fig 2 and 4; Par. 0017, 0018). Having the component be

formed from a layer of EVOH sandwiched between two layers of HDPE helps to prevent permeation (Par. 0020).

Therefore, at the time of invention it would have been obvious to one of ordinary skill in the art to modify the system taught by Muirhead so as to form the component from a multilayer structure, wherein the multilayer structure includes at least two layers of high-density polyethylene (HDPE) between which a layer comprising an ethylene/vinyl alcohol copolymer (EVOH) is inserted, as taught by Brandner, in order to help prevent fuel permeation.

As to Claim 16, Muirhead and Brandner disclose the fastening system according to Claim 11. Muirhead discloses the component includes at least one of a plate, a delivery tube, a fitting, a spout, a valve, or any other accessory of the fuel tank (Fig. 13; Col. 11, ll. 41-47).

In regard to Claim 17, the presence of process limitations on product claims, wherein the product does not otherwise patentably distinguish over the prior art, cannot impart patentability to the product. In re Stephens 145 USPQ 656 (CCPA 1965). As such, Muirhead and Brandner disclose a fuel system comprising a fuel tank and at least one accessory (104) (Fig. 10, 11 and 13; Col. 10, line 41 - Col. 11, line 1).

As to Claim 21, Muirhead and Brandner disclose the fastening system according to Claim 11. Muirhead further discloses the wall of the tank includes a bent portion defining the perimeter of the opening of the tank (Fig. 11 and 13).

As to Claim 22, Muirhead and Brandner disclose the fastening system according to Claim 21. Muirhead further discloses the conical surface of the perimeter of the opening in the tank comprises a cavity that receives the conical surface profile of the component (Fig. 11 and 13)

As to Claim 24, Muirhead and Brandner disclose the fastening system according to Claim 21. Muirhead further discloses the thickness of a wall portion of the tank forming the conical surface of the tank is a same thickness as a thickness of a wall portion of the tank surrounding the conical surface of the tank (Fig. 11 and 13).

As to Claim 18, Muirhead discloses a method of manufacturing a fuel system, comprising: manufacturing a tank comprising an opening, a perimeter of which has a conical surface profile, the perimeter of the opening being made by deforming a wall of the tank; manufacturing a component (104, 121, 122) including a part with a conical surface profile, the component including a tubular shape; and welding at least one portion of the conical surface of the perimeter of the opening in the tank to at least one portion of the conical surface of the component, and wherein the tank and the component are manufactured by molding by using one or more molds (102) including impressions corresponding to the conical surfaces, wherein the tank each includes a multilayer structure and, along the entire surface where the component is fastened to the tank, a number of superposed layers is equal to a sum of a number of layers in the component and a number of layers in the tank, and wherein the multilayer

Art Unit: 3781

structure includes at least two layers (210) of high-density polyethylene (HDPE) between which a layer (202) comprising an ethylene/vinyl alcohol copolymer (EVOH) is inserted (Fig. 10-13; Col. 7, ll. 12-56; Col. 10, line 41 - Col. 11, line 14).

Muirhead does not expressly disclose the component includes a multilayer structure, wherein the multilayer structure includes at least two layers of high-density polyethylene (HDPE) between which a layer comprising an ethylene/vinyl alcohol copolymer (EVOH) is inserted.

However, Brandner discloses a fuel tank and a component, wherein the component (34) includes a multilayer structure, wherein the multilayer structure includes at least two layers (48, 50) of high-density polyethylene (HDPE) between which a layer (52) comprising an ethylene/vinyl alcohol copolymer (EVOH) is inserted (Fig 2 and 4; Par. 0017, 0018). Having the component be formed from a layer of EVOH sandwiched between two layers of HDPE helps to prevent permeation (Par. 0020).

Therefore, at the time of invention it would have been obvious to one of ordinary skill in the art to modify the system taught by Muirhead so as to form the component from a multilayer structure, wherein the multilayer structure includes at least two layers of high-density polyethylene (HDPE) between which a layer comprising an ethylene/vinyl alcohol copolymer (EVOH) is inserted, as taught by Brandner, in order to help prevent fuel permeation.

As to Claim 25, Muirhead and Brandner disclose the fastening system according to Claim 18. Muirhead further discloses the wall of the tank includes a bent portion defining the perimeter of the opening of the tank (Fig. 11 and 13).

As to Claim 26, Muirhead and Brandner disclose the fastening system according to Claim 25. Muirhead further discloses wherein the conical surface of the perimeter of the opening in the tank comprises a cavity that receives the conical surface profile of the component (Fig. 11 and 13).

As to Claim 28, Muirhead and Brandner disclose the fastening system according to Claim 25. Muirhead further discloses the thickness of a wall portion of the tank forming the conical surface of the tank is a same thickness as a thickness of a wall portion of the tank surrounding the conical surface of the tank (Fig. 11 and 13).

As to Claims 29 and 30, Muirhead and Brandner disclose the fastening system and method according to Claims 11 and 18, respectively. Neither expressly discloses wherein the conical surface of the component is defined by a circular arc as viewed in a direction perpendicular to the axis of the conical surface profile.

However, at the time of invention it would have been obvious to one of ordinary skill in the art to modify the component taught by Muirhead and Brandner so as to have the conical surface of the component is defined by a circular arc as viewed in a direction perpendicular to the axis of the conical surface profile, in order to increase the surface area of the conical surface profile



Art Unit: 3781

and thereby allow for a larger welded area between the component and the tank.

A change in form or shape is generally recognized as being within the level of ordinary skill in the art, absent any showing of unexpected results. *In re Dailey et al.*, 149 USPQ 47.

As to claims 31 and 32, Muirhead and Brandner disclose the method and system according to claims 18 and 25, respectively. Muirhead further discloses the component covers the entire opening (Fig. 13, 19 and 20).

3. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Muirhead and Brandner as applied to claim 18 above, and further in view of Abate (US 6627016, of record).

As to Claim 20, Muirhead and Brandner disclose the method according to Claim 18. Neither expressly discloses the welding is hot-plate welding using self-centering hot plates or a robotic system controlled by a camera.

However, Abate discloses a molded fuel tank (1) with a plurality of components (4, 5, 6, 7), wherein the welding done on the tank is hot-plate welding using a robotic system with optical and laser scanning (Fig. 1; Col. 4, l1. 13-17; Col. 4, line 62 - Col. 5, line 19). Abate discloses the robotic system allows increased accuracy and repeatability of the manufacturing processes by making adaptive changes during the welding process to compensate for variations in the fuel tanks due to an inherent drawback of the molding process (Col. 3, l1.60-65).

Therefore, at the time of invention it would have been obvious to one of ordinary skill in the art to use hot-plate welding robots with optical and laser scanning, as taught by Abate, to form the fuel tank taught by Muirhead and Brandner in order to provide for increased accuracy and repeatability in the manufacturing process.

4. Claims 23 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Muirhead and Brandner as applied to claims 21 and 25 above, and further in view of Goto (US 20020017527, of record).

As to Claims 23 and 27, Muirhead and Brandner disclose the fastening system according to Claims 21 and 25, respectively. Muirhead does not expressly disclose the conical surface of the perimeter of the opening in the tank protrudes from a portion of the tank wall in a direction toward the component.

However, Goto discloses a component (2) integrally formed with a multilayer fuel tank (1), the fuel tank having an opening (1h), wherein a perimeter of the opening protrudes from a portion of the tank wall in a direction toward the component in order to allow for the attachment of internally treaded accessories (5) (Fig. 1, 2 and 4-12; Par. 0038, 0039 and 0042).

Therefore at the time of invention it would have been obvious to one of ordinary skill in the art to modify the fastening system taught by Muirhead and Brandner so as to form the conical surface of the perimeter of the opening in the tank protrudes from a portion of the tank wall in a direction toward the

Art Unit: 3781

component, as taught by Goto, in order to allow for the attachment of already existing, internally threaded accessories.

### ***Response to Arguments***

5. Applicant's arguments filed 11/3/2010 have been fully considered but they are not persuasive.

Applicant argues on Page 9 in the Remarks that if one of ordinary skill in the art were to remove the flange plate of Muirhead and weld accessories directly to the tank, as in Brandner, there would be no reason to keep the conical recess of Muirhead. However, Brandner was used for the teaching of forming a component of a multilayered structure in order to reduce permeation and not for the specific component. The only modification made to Muirhead was in the material of the component.

Applicant argues on Page 10 in the Remarks that since Brandner utilizes an additional cover at the site of the weld between the component and tank that one would not be motivated to modify the component of Muirhead to be multilayered and would instead used a monolayer flange with an impermeable cover. However, since the component taught by Brandner is multilayered at the site of the weld and Brandner clearly discloses the advantages of a multilayering, one of ordinary skill in the art would recognize the benefits of forming the component in a multilayered structure in order to reduce permeation. Using an additional impermeable cover at the site of the weld does not diminish the fact

that fuel permeation at the site of the weld is reduced due to component being multilayered.

Applicant argues on Page 11 in the Remarks that modifying Muirhead and Brandner to have the tank protrude in a direction toward the component, as taught by Goto, would go directly against the intended use of Muirhead to reduce the height of the tank. However, the limitation of "protrudes from a portion of the tank wall in a direction toward the component" does not necessarily mean the portion is extending outwardly from the tank. As taught by Goto, portions 1f (Fig. 1, 6) as well as 11b (Fig. 11, 12) protrude in a direction of the component without extending outwardly from the tank. Thus, modifying Muirhead in view of Goto does not increase the overall height of the tank.

### ***Conclusion***

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

Art Unit: 3781

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brett Edwards whose telephone number is (571)270-1443. The examiner can normally be reached on M-F 9:30 AM - 6 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anthony Stashick can be reached on (571)272-4561. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/B. E./  
Examiner, Art Unit 3781

/Anthony Stashick/  
Supervisory Patent Examiner, Art  
Unit 3781